

Mr. Tyler Kitt
EP Graphics, Inc.
169 South Jefferson Street
Berne, Indiana 46711

Re: 001-14219
Second Significant Revision to
FESOP 001-5957-00039

Dear Mr. Kitt:

EP Graphic, Inc. was issued a permit on December 11, 1996 for a commercial lithographic printing plant. A letter requesting changes to this permit was received on March 29, 2001. Pursuant to the provisions of 326 IAC 2-8-11.1 a significant permit revision to this permit is hereby approved as described in the attached Technical Support Document.

The modification consists of the following changes:

- (a) Replacement of the M1000A press (identified as press #62 in FESOP 001-5957-00039) with a web fed lithographic press (identified as press #67) having a maximum capacity of 32.76 million square inches per hour, exhausting to the regeneration thermal oxidizer (identified as RTO-1).
- (b) Replacement of the two catalytic oxidizers (identified as C1 and C2 in FESOP 001-5957-00039) with one regenerative thermal oxidizer (identified as RTO-1) having a VOC destruction efficiency equal to or greater than the existing catalytic oxidizers.

The following construction conditions are applicable to the proposed project:

- 1. General Construction Conditions
The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).
- 2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
- 3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

4. Pursuant to 326 IAC 2-1.1-9 (Revocation), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.
6. For a period of not more than sixty (60) days after Construction of Press #67, the source may operate either Press # 62 or Press #67, but shall not operate these presses simultaneously. After the sixty (60) day period has expired, the source shall permanently remove from service printing press #62.

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the significant permit revision into the permit. All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this modification and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. Pursuant to Contract No. A305-0-00-36, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Amanda Baynham, ERG, P.O. Box 2010, Morrisville, North Carolina 27560, or call (919) 468-7910 to speak directly to Ms. Baynham. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call (800) 451-6027, press 0 and ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments
ERG/AB

cc: File - Adams County
U.S. EPA, Region V
Air Compliance Section Inspector - Jim Thorpe
Compliance Data Section - Karen Nowak
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) OFFICE OF AIR QUALITY

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015
Phone: 1-800-451-6027

**EP Graphics
169 South Jefferson Street
Berne, Indiana 46711**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the facilities listed in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 and contains the conditions and provisions specified in 326 IAC 2-8 and 40 CFR Part 70.6 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments) and IC 13-15 and IC 13-17 (prior to July 1, 1996, IC 13-1-1-4 and IC 13-7-10).

Operation Permit No.: F001-5957-00039	
Issued by: Felicia R. George, Assistant Commissioner Office of Air Quality	Issuance Date: December 11, 1996

First Significant Permit Revision: 001-10374-00039 Affected Pages: 1, 4, 22, 23, 24, 25, 25a

Second Significant Permit Revision : 001-14219-00039		Affected Pages: 4, 22, 22a, 23, 24, and 25	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management		Issuance Date: July 13, 2001	

SECTION A SOURCE SUMMARY

A.1 General Information [326 IAC 2-8-3(c)]

The Permittee owns and operates a commercial lithographic printing facility.

Responsible Official: Tyler Kitt
Source Address: 169 South Jefferson Street, Berne, Indiana 46711
Mailing Address: 169 South Jefferson Street, Berne, Indiana 46711
SIC Code: 2752
County Location: Adams
County Status: Attainment for all criteria pollutants
Source Status: Synthetic Minor Source, FESOP Program

A.2 Emission Units and Pollution Control Summary [326 IAC 2-8-3(c)]

The stationary source consists of the following emission units and pollution control devices:

- (a) One (1) web fed lithographic press, identified as press #55, with a maximum capacity of 15.55 million square inches per hour, exhausting to general ventilation.
- (b) One (1) web fed lithographic press, identified as press #60, with a maximum capacity of 16.42 million square inches per hour, exhausting at one (1) stack, identified as S2.
- (c) One (1) web fed lithographic press, including one (1) overcoating process, identified as press #62, with a maximum capacity of 54.72 million square inches per hour, exhausting to the regenerative thermal oxidizer (identified as RTO-1).
- (d) One (1) web fed lithographic press, identified as press #63, with a maximum capacity of 36.29 million square inches per hour, exhausting at one (1) stack, identified as S4.
- (e) One (1) web fed lithographic press, including one (1) overcoating process, identified as press #66, with a maximum capacity of 62.20 million square inches per hour, exhausting to the regenerative thermal oxidizer (identified as RTO-1).
- (f) One (1) bindery machine, equipped with a cyclone in series with a baghouse for dust control, identified as DC1, with a maximum capacity of 26,323 cubic feet per minute exhaust rate.
- (g) One (1) web fed lithographic press, identified as press #67, with a maximum capacity of 32.76 million square inches per hour, exhausting to the regenerative thermal oxidizer (identified as RTO-1).

A.3 Insignificant Activities [326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(20):

- (a) Activities with potential VOC emissions less than or equal to 15 pounds per day:
 - (1) One (1) sheet fed lithographic press, identified as press #65, with a maximum capacity of 2.60 million square inches per hour.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description:

- (a) One (1) web fed lithographic press, identified as press #55, with a maximum capacity of 15.55 million square inches per hour, exhausting to general ventilation.
- (b) One (1) web fed lithographic press, identified as press #60, with a maximum capacity of 16.42 million square inches per hour, exhausting at one (1) stack, identified as S2.
- (c) One (1) web fed lithographic press, including one (1) overcoating process, identified as press #62, with a maximum capacity of 54.72 million square inches per hour, exhausting to the regenerative thermal oxidizer (identified as RTO-1).
- (d) One (1) web fed lithographic press, identified as press #63, with a maximum capacity of 36.29 million square inches per hour, exhausting at one (1) stack, identified as S4.
- (e) One (1) web fed lithographic press, including one (1) overcoating process, identified as press #66, with a maximum capacity of 62.20 million square inches per hour, exhausting to the regenerative thermal oxidizer (identified as RTO-1).
- (f) One (1) bindery machine, equipped with a cyclone in series with a baghouse for dust control, identified as DC1, with a maximum capacity of 26,323 cubic feet per minute exhaust rate.
- (g) One (1) web fed lithographic press, identified as press #67, with a maximum capacity of 32.76 million square inches per hour, exhausting to the regenerative thermal oxidizer (identified as RTO-1).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emissions Limitations and Standards [326 IAC 2-8-4(1)]

D.1.1 Volatile Organic Compounds

That pursuant to 326 IAC 2-8-4 (FESOP), the total VOC input to printing presses (#55, 56, 57, 60, 62, 63, 65, 66, and 67) and to the associated clean-up operations shall be limited to 90.53 tons per twelve consecutive months. (For presses #62, #66, and #67, there is a regenerative thermal oxidizer (identified as RTO-1) for control. For these three (3) presses, the VOC input would be determined after the effect of the regenerative thermal oxidizer). Therefore, the requirements of 326 IAC 2-7 do not apply.

To determine the VOC input, the source shall be allowed:

- (a) A VOC retention factor of 20% for the heatset inks.

D.1.2 Volatile Organic Compounds [326 IAC 8-1-6]

The Permittee shall apply the following Best Available Control Technology (BACT) to printing press #67:

- (a) Negative air flow pressure to the dryer as indicated by differential pressure gauges across the dryer inlets;
- (b) One hundred percent (100%) capture of the VOCs emitted by the heatset inks not retained by the substrate;

- (c) Seventy percent (70%) capture of the VOCs emitted from alcohol substitution in the fountain solutions; and
- (d) Ninety percent (90%) destruction of the VOCs captured using a regenerative thermal oxidizer operating at a minimum temperature of 1,400 degrees F.

D.1.3 Hazardous Air Pollutants

The hazardous air pollutant emissions shall be limited as follows:

- (a) The amount of any single hazardous air pollutant (HAP) input to the printing operation and associated cleanup activities shall be limited to less than 10 tons per twelve (12) consecutive months.
- (b) The amount of any combination of HAPs input to the printing operation and associated cleanup activities shall be limited to less than 25 tons per twelve (12) consecutive months.

- (c) For presses #62, #66 and #67, there is a regenerative thermal oxidizer for control. For these three (3) presses, the HAP input may be determined after the effect of the catalytic oxidizer. To determine the HAP input, the source shall be allowed:

- (1) A HAP retention factor of 20% for the heatset inks.

D.1.4 Preventive Maintenance Plan

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control device.

Testing Requirements [326 IAC 2-8-4(3)]

D.1.5 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]

During the period between 30 and 36 months after issuance of this permit, the Permittee shall perform VOC testing on the regenerative thermal oxidizer (identified as RTO-1) utilizing Methods 25 (40 CFR 60, Appendix A) for VOC or other methods as approved by the Commissioner. The test shall be repeated at least once every five years from the date of this valid compliance demonstration.

Compliance Monitoring Requirements [326 IAC 2-8-5(a)(1)]

D.1.6 Regenerative Thermal Oxidizer

- (a) The regenerative thermal oxidizer shall operate at all times that presses #62, #66, and #67 are in operation. When operating, the thermal incinerator shall maintain a minimum operating temperature of 1400EF during operation until a temperature and fan amperage has been determined from the most recent compliant stack test, as approved by IDEM. The temperature correlates to an overall VOC control efficiency of 90% based on the manufacturer design specifications.
- (b) The permittee shall maintain a negative air flow pressure for the press dryers relative to the surrounding room as indicated by differential pressure gauges across the dryer inlets and outlets. To demonstrate that a negative air flow pressure is achieved on a continuous basis, the Permittee shall install differential pressure gauges at each of the dryer inlets and outlets, and measure and record the differential pressure across the inlets and outlets of the #62, #66, and #67 press dryers at least once per shift. Maintaining a negative pressure across the dryer inlets and outlets shall yield the following capture efficiencies for presses #62, #66, and #67:
- (1) One hundred percent (100%) capture of the VOCs emitted by the heatset inks not retained by the substrate; and

- (2) Seventy percent (70%) capture of the VOCs emitted from alcohol substitutes in the fountain solutions.
- (c) To comply with Conditions D.1.1, D.1.2 and D.1.3, the Permittee may operate either printing press #62 or printing press #67 for a period of not more than sixty (60) days following construction of printing press #67. Presses #62 and #67 shall not be operated simultaneously. Sixty (60) days after construction of printing press #67, the Permittee shall permanently remove from service printing press #62.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

D.1.7 Regenerative Thermal Oxidizer

To document compliance with Condition D.1.6, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be complete and sufficient to establish compliance with the Compliance Monitoring requirements established in Condition D.1.6. These records shall contain a minimum of the following:

- (1) Records of the regenerative thermal oxidizer operating parameters including the VOC destruction efficiency regenerative thermal oxidizer and a description of the data used to establish the capture and destruction efficiencies;
- (2) Records of the regenerative thermal oxidizer temperature recorded on a daily basis;
- (3) Records of the differential pressure across the dryer inlets and outlets as specified in Condition D.1.6(b). The records shall be kept using differential pressure gauges with one inlet of each gauge being within the dryer and the other inlet of the gauge being open to the ambient air in the press room; and
- (4) Records of the dryer temperatures. The records shall be kept using an electronic data management system (EDMS) which shall be installed and operated to record the instantaneous temperature on a frequency of not less than every hour. As an alternative to installing an EDMS, manual readings shall be taken every one hour.

All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.8 Volatile Organic Compounds (VOC) Usage

- (a) To document compliance with Conditions D.1.1 and D.1.2, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Conditions D.1.1 and D.1.2.
 - (1) The amount and VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
 - (2) The cleanup solvent usage for each month;
 - (3) The total VOC usage for each month; and
 - (4) The weight of VOCs emitted for each compliance period.

- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.9 Hazardous Air Pollutants (HAP)

- (a) To document compliance with Condition D.1.2, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the HAP usage limits and/or the HAP emission limits established in Condition D.1.2.
- (1) The amount and HAP content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
 - (2) The cleanup solvent usage for each month;
 - (3) The total HAP usage for each month;
 - (4) The weight of HAPs emitted for each compliance period; and
 - (5) Identification of the facility or facilities associated with the usage of each HAP.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.10 Quarterly Reporting

A quarterly summary of the information to document compliance with Conditions D.1.1 and D.1.2 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

**Indiana Department of Environmental Management
Office of Air Quality**

**Technical Support Document (TSD) for a Significant Permit Revision to a
Federally Enforceable State Operating Permit**

Source Background and Description

Source Name:	EP Graphics, Inc.
Source Location:	169 South Jefferson Street, Berne, Indiana 46711
County:	Adams
SIC Code:	2752
Operation Permit No.:	F001-5957-00039
Operation Permit Issuance Date:	December 11, 1996
Minor Permit Revision No.:	001-14219-00039
Permit Reviewer:	ERG/AB

The Office of Air Quality (OAQ) has reviewed a revision application from EP Graphics, Inc. relating to the operation of a commercial lithographic printing plant.

History

On March 29, 2001, EP Graphics, Inc. submitted an application to the OAQ requesting to:

- (a) Replace the M1000A press (identified as press #62) in FESOP 001-5957-00039) with a smaller Process King press (identified as press #67); and
- (b) Replace the two catalytic oxidizers (identified as C1 and C2) with one regenerative thermal oxidizer (identified as RTO-1) having a VOC destruction efficiency equal to or greater than the existing catalytic oxidizers.

Existing Approvals

The source was issued a FESOP (F001-5957-00039) on December 11, 1996. The source has since received the following:

- (a) First Administrative Amendment 001-10757-00039, issued on April 6, 1999;
- (b) First Significant Permit Revision 001-10374-00039, issued on September 14, 1999.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the Significant Permit Revision be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on March 29, 2001. Additional information was received on April 6, 2001.

Justification for Modification

This FESOP is being modified through a significant permit revision. This modification is being performed pursuant to 326 IAC 2-8-11.1(f)(1)(c) because the new printing press is subject to the requirements of 326 IAC 8-1-6.

Emission Calculations

The calculations submitted by the applicant have been verified and found to be accurate and correct. These calculations are provided in Appendix A of this document (pages 1 through 5).

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

Pollutant	Potential To Emit (tons/year)
PM	0.31
PM-10	0.43
SO ₂	0.034
VOC	276.39
CO	3.45
NO _x	5.92

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

HAP's	Potential To Emit (tons/year)
Glycol Ethers	13.1
Vinyl Acetate	0.02
Ethylene Glycol	0.01
Styrene	0.02
TOTAL	13.15

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of VOC is equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

The source has agreed to limit VOC emissions to 100 tons per year. Therefore, rule 326 IAC 2-8 will apply.

- (b) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is equal to or greater than ten (10) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

The source has agreed to limit HAPs to less than 10 tons per year for a single HAP and 25 tons per year for a combination of HAPs. Therefore, rule 326 IAC 2-8 will apply.

Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
All Printing Presses	0.00	0.00	0.00	98.8	0.00	0.00	9.0 Single 24.0 Combination
Bindery Operations	12.88	3.22	0.00	0.00	0.00	0.00	0.00
Heaters	0.29	0.29	0.014	0.13	0.50	2.38	0.00
Total Emissions	13.2	3.5	0.014	99.0	0.5	2.38	9.0 Single 24.0 Combination

County Attainment Status

The source is located in Adams County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Adams County has been designated as attainment or unclassifiable for ozone.

Federal Rule Applicability

- (a) This source is not subject to the requirements of the New Source Performance Standard (NSPS), 40 CFR 60, Subpart QQ - Standards of Performance for the Graphic Arts Industry : Publication Rotogravure Printing (326 IAC 12), because this NSPS applies only to rotogravure printing presses. EP Graphics uses only lithographic presses at this plant.
- (b) This source is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63, Subpart KK - National Emission Standards for the Printing and Publishing Industry (326 IAC 14), because the NESHAP applies to rotogravure and wide-web flexographic printing processes. EP Graphics uses only lithographic printing presses at this plant.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Adams County and the potential to emit CO, VOC, NO_x, PM-10 and SO₂ is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of the new Process King lithographic press will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 2-8-4 (FESOP)

- (a) The pursuant to 326 IAC 2-8-8 (FESOP), the total VOC input to printing presses (#55, 56, 57, 60, 62, 63, 65, 66, and 67) and to the associated clean-up operations shall be limited to 90.53 tons per twelve (12) consecutive months. (For presses # 62, 66, and 67, there is a regenerative thermal oxidizer (identified as RTO-1) for control. For these three (3) presses, the VOC input shall be determined after the effect of the regenerative thermal oxidizer. Therefore, the requirements of 326 IAC 2-7 do not apply.

This limit ensures that VOC emissions from the entire source, including the VOC emission from insignificant activities, is less than one hundred (100) tons per year.

- (b) The hazardous air pollutant emissions shall be limited as follows:
 - (1) The amount of any single hazardous air pollutant (HAP) input to the printing operation and associated cleanup activities shall be limited to less than 10 tons per twelve (12) consecutive months.
 - (2) The amount of any combination of HAPs input to the printing operation and associated cleanup activities shall be limited to less than 25 tons per twelve (12) consecutive months.

326 IAC 8-1-6 (Volatile Organic Compounds)

- (a) Since the potential VOC emissions before controls for the new Process King lithographic printing press are 63.8 tons per year, the source was required to submit a BACT analysis under 326 IAC 8-1-6 (New Facilities: General Reduction Requirements). The source had previously submitted a BACT analysis for its larger lithographic presses in 1996, which was subsequently updated in 1999.

BACT for the lithographic presses was determined in 1999 to be the following:

- (1) Negative air flow pressure to the dryer as indicated by differential pressure gauges across the dryer inlets;

- (2) One hundred percent (100%) capture of the VOCs emitted by the heatset inks not retained by the substrate;
- (3) Seventy percent (70%) capture of the VOCs emitted from alcohol substitution in the fountain solutions; and
- (4) Ninety percent (90%) destruction of the VOCs captured in the catalytic oxidizers operating at a minimum temperature of 650 degrees F.

Based on our review of the EPA BACT/LAER Clearinghouse, IDEM has determined that the controls described above still represent BACT for heat offset lithographic presses. Only two postings have been added to the EPA BACT/LAER Clearinghouse since 1999. One of these was for a flexographic printing facility (entry CA-0834) and the other was for a screen printing facility (entry CA-0823). Since these postings are for printing processes that are very different from the lithographic printing conducted at EP Graphics, they are not applicable to the Process King printing press.

The source has also requested approval for replacing the two catalytic oxidizers currently used at the plant with one regenerative thermal oxidizer. Since the regenerative thermal oxidizer the source proposes to construct has a VOC destruction efficiency equal to or greater than the two catalytic oxidizers, IDEM has determined that the regenerative thermal oxidizer is an acceptable replacement for the catalytic oxidizers.

BACT for the new Process King lithographic printing press is as follows:

- (1) Negative air flow pressure to the dryer as indicated by differential pressure gauges across the dryer inlets;
 - (2) One hundred percent (100%) capture of the VOCs emitted by the heatset inks not retained by the substrate;
 - (3) Seventy percent (70%) capture of the VOCs emitted from alcohol substitution in the fountain solutions; and
 - (4) Ninety percent (90%) destruction of the VOCs captured using a regenerative thermal oxidizer operating at a minimum temperature of 1,500 degrees F.
- (b) To comply with VOC and HAP limits, the Permittee may operate either printing press #62 or printing press #67 for a period of not more than sixty (60) days following construction of printing press #67. Presses #62 and #67 shall not be operated simultaneously. Sixty (60) days after construction of printing press #67, the Permittee shall permanently remove from service printing press #62.

326 IAC 8-5-5 (Miscellaneous Operations: Graphic Arts Operations)

This source is not subject to the requirements of 326 IAC 8-5-5 because this rule applies only to packaging rotogravure, publication rotogravure, and flexographic printing. This source uses only heat offset lithographic presses.

Testing Requirements

A stack test is required for the regenerative thermal oxidizer because (1) the source has claimed an overall control efficiency of greater than 85%; and (2) the control device hasn't been tested in the past five years and accounts for greater than 40% of the VOC PTE before controls.

The Permittee shall perform VOC testing between 30 and 36 months after issuance of the Minor Permit Revision, using methods 25 (40 CFR 60, Appendix A) or other methods as approved by the Commissioner.

Compliance Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this modification are as follows:

- (a) The regenerative thermal oxidizer shall operate at all times that the process is in operation. When operating, the thermal incinerator shall maintain a minimum operating temperature of 1500°F during operation until a temperature and fan amperage has been determined from the most recent compliant stack test, as approved by IDEM. The temperature correlates to an overall VOC control efficiency of 90% based on design specifications.
- (b) The Permittee shall maintain a negative air flow pressure for the press dryers relative to the surrounding room as indicated by differential pressure gauges across the dryer inlets and outlets of the #62, #66, and #67 dryers at least once per shift. Maintaining a negative pressure across the dryer inlets and outlets shall yield the following capture efficiencies for presses #62, #66, #67:
 - (i) One hundred (100%) capture of the VOCs emitted by the heatset inks not retained by the substrate; and
 - (ii) Seventy percent (70%) capture of the VOCs emitted from alcohol substitutes in the fountain solutions.

These monitoring conditions are necessary because the regenerative thermal oxidizer (identified as RTO-1) must operate properly to ensure compliance with 326 IAC 8-1-6 (Volatile Organic Compounds) and 326 IAC 2-8-4 (FESOP).

Proposed Changes

SECTION A SOURCE SUMMARY

A.1 General Information [326 IAC 2-8-3(c)]

The Permittee owns and operates a commercial lithographic printing facility.

Responsible Official: ~~Nick Smith~~ **Tyler Kitt**
Source Address: 169 South Jefferson Street, Berne, Indiana 46711
Mailing Address: 169 South Jefferson Street, Berne, Indiana 46711
SIC Code: 2752
County Location: Adams
County Status: Attainment for all criteria pollutants
Source Status: Synthetic Minor Source, FESOP Program

A.2 Emission Units and Pollution Control Summary [326 IAC 2-8-3(c)]

The stationary source consists of the following emission units and pollution control devices:

- (a) One (1) web fed lithographic press, identified as press #55, with a maximum capacity of 15.55 million square inches per hour, exhausting to general ventilation.
- (b) One (1) web fed lithographic press, identified as press #60, with a maximum capacity of 16.42 million square inches per hour, exhausting at one (1) stack, identified as S2.
- (c) One (1) web fed lithographic press, including one (1) overcoating process, identified as press #62, with a maximum capacity of 54.72 million square inches per hour, ~~equipped with a 0.036 million Btu per hour catalytic oxidizer, exhausting at one (1) stack, identified as S3.~~ **exhausting to the regenerative thermal oxidizer (identified as RTO-1).**
- (d) One (1) web fed lithographic press, identified as press #63, with a maximum capacity of 36.29 million square inches per hour, exhausting at one (1) stack, identified as S4.
- (e) One (1) web fed lithographic press, including one (1) overcoating process, identified as press #66, with a maximum capacity of 62.20 million square inches per hour, ~~equipped with a 0.053 million Btu per hour catalytic oxidizer, exhausting at one (1) stack, identified as S5.~~ **to the regenerative thermal oxidizer (identified as RTO-1).**
- (f) One (1) bindery machine, equipped with a cyclone in series with a baghouse for dust control, identified as DC1, with a maximum capacity of 26,323 cubic feet per minute exhaust rate.
- (g) **One (1) web fed lithographic press, identified as press #67, with a maximum capacity of 32.76 million square inches per hour, exhausting to the regenerative thermal oxidizer (identified as RTO-1).**

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description:

- (a) One (1) web fed lithographic press, identified as press #55, with a maximum capacity of 15.55 million square inches per hour, exhausting to general ventilation.
- (b) One (1) web fed lithographic press, identified as press #60, with a maximum capacity of 16.42 million square inches per hour, exhausting at one (1) stack, identified as S2.
- (c) One (1) web fed lithographic press, including one (1) overcoating process, identified as press #62, with a maximum capacity of 54.72 million square inches per hour, ~~equipped with a 0.036 million Btu per hour catalytic oxidizer, exhausting at one (1) stack, identified as S3.~~ **exhausting to the regenerative thermal oxidizer (identified as RTO-1).**
- (d) One (1) web fed lithographic press, identified as press #63, with a maximum capacity of 36.29 million square inches per hour, exhausting at one (1) stack, identified as S4.
- (e) One (1) web fed lithographic press, including one (1) overcoating process, identified as press #66, with a maximum capacity of 62.20 million square inches per hour, ~~equipped with a 0.053 million Btu per hour catalytic oxidizer, exhausting at one (1) stack, identified as S5.~~ **to the regenerative thermal oxidizer (identified as RTO-1).**
- (f) One (1) bindery machine, equipped with a cyclone in series with a baghouse for dust control, identified as DC1, with a maximum capacity of 26,323 cubic feet per minute exhaust rate.
- (g) **One (1) web fed lithographic press, identified as press #67, with a maximum capacity of 32.76 million square inches per hour, exhausting to the regenerative thermal oxidizer (identified as RTO-1).**

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emissions Limitations and Standards [326 IAC 2-8-4(1)]

D.1.1 Volatile Organic Compounds

That pursuant to 326 IAC 2-8-4 (FESOP), the total VOC input to printing presses (#55, 56, 57, 60, 62, 63, 65, ~~and 66, and 67~~) and to the associated clean-up operations shall be limited to 90.53 tons per twelve consecutive months. (For presses #62, ~~and #66, and #67~~, there ~~are catalytic oxidizers~~ **is a regenerative thermal oxidizer (identified as RTO-1)** for controls. For these ~~two (2)~~ **three (3)** presses, the VOC input would be determined after the effect of the ~~catalytic oxidizer~~ **regenerative thermal oxidizer**). Therefore, the requirements of 326 IAC 2-7 do not apply.

To determine the VOC input, the source shall be allowed:

- (a) A VOC retention factor of 20% for the heatset inks.

D.1.2 Volatile Organic Compounds [326 IAC 8-1-6]

The Permittee shall apply the following Best Available Control Technology (BACT) to printing press #67:

- (a) **Negative air flow pressure to the dryer as indicated by differential pressure gauges across the dryer inlets;**
- (b) **One hundred percent (100%) capture of the VOCs emitted by the heatset inks not retained by the substrate;**

- (c) **Seventy percent (70%) capture of the VOCs emitted from alcohol substitution in the fountain solutions; and**
- (d) **Ninety percent (90%) destruction of the VOCs captured using a regenerative thermal oxidizer operating at a minimum temperature of 1,500 degrees F.**

D.1.23 Hazardous Air Pollutants

The hazardous air pollutant emissions shall be limited as follows:

- (a) The amount of any single hazardous air pollutant (HAP) input to the printing operation and associated cleanup activities shall be limited to less than 10 tons per twelve (12) consecutive months.
- (b) The amount of any combination of HAPs input to the printing operation and associated cleanup activities shall be limited to less than 25 tons per twelve (12) consecutive months.
- (c) For presses #62, and #66 and #67, there ~~are catalytic oxidizers~~ **is a regenerative thermal oxidizer** for control. For these ~~two (2)~~ **three (3)** presses, the HAP input may be determined after the effect of the catalytic oxidizer. To determine the HAP input, the source shall be allowed:
 - (1) A HAP retention factor of 20% for the heatset inks.

D.1.34 Preventive Maintenance Plan

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control device.

Testing Requirements [326 IAC 2-8-4(3)]

D.1.4 Compliance Stack Tests

~~Compliance stack tests shall be performed on the catalytic oxidizers G1 and G2 for VOCs within 24 to 36 months of the issuance of this First Significant Permit Revision to the FESOP. These tests shall be repeated once every five years. Stack tests that were performed on these units within the last 6 months, utilizing methods as approved by the Commissioner, may satisfy the stack testing requirements for these units during this permit term. These tests shall be performed using methods approved by the OAM.~~

D.1.5 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]

During the period between 30 and 36 months after issuance of this permit, the Permittee shall perform VOC testing on the regenerative thermal oxidizer (identified as RTO-1) utilizing Methods 25 (40 CFR 60, Appendix A) for VOC or other methods as approved by the Commissioner. The test shall be repeated at least once every five years from the date of this valid compliance demonstration.

Compliance Monitoring Requirements [326 IAC 2-8-5(a)(1)]

D.1.5 Catalytic Oxidizers

~~That pursuant to CP-001-4963, issued on April 1, 1996, and 326 IAC 2-8-4, the 0.36 million Btu per hour and 0.053 million Btu per hour natural gas fired catalytic oxidizers, identified as G1, and G2, respectively, shall be in operation at all times when press #62 and press #66 are in operation. The incinerators shall be operated and maintained such that:~~

- ~~(a) each catalytic incinerator achieves a minimum operating temperature of 650° F, or a temperature, as determined in the most recent compliance stack tests, that achieves and maintains a minimum 90% destruction of the VOC captured, and~~

D.1.6 Regenerative Thermal Oxidizer

- (a) **The regenerative thermal oxidizer shall operate at all times that presses #62, #66, and #67 are in operation. When operating, the thermal incinerator shall maintain a minimum operating temperature of 1500EF during operation until a temperature and fan amperage has been determined from the most recent compliant stack test, as approved by IDEM. The temperature correlates to an overall VOC control efficiency of 90% based on the manufacturer design specifications.**
- (b) ~~each catalytic incinerator achieves~~**The Permittee shall maintain** a negative air flow pressure ~~to for the press~~ **for the press** dryers relative to the surrounding room as indicated by differential pressure gauges across the dryer inlets and outlets. To demonstrate that a negative air flow pressure is achieved on a continuous basis, the Permittee shall install differential pressure gauges at each of the dryer inlets and outlets, and measure and record the differential pressure across the inlets and outlets of the #62, ~~and #66, and #67~~ **press** dryers at least once per shift. Maintaining a negative pressure across the dryer inlets and outlets shall yield the following capture efficiencies for presses #62 and #66:
- (1) One hundred percent (100%) capture of the VOCs emitted by the heatset inks not retained by the substrate; and
 - (2) Seventy percent (70%) capture of the VOCs emitted from alcohol substitutes in the fountain solutions.
- (c) **To comply with Conditions D.1.1, D.1.2 and D.1.3, the Permittee may operate either printing press #62 or printing press #67 for a period of not more than sixty (60) days following construction of printing press #67. Presses #62 and #67 shall not be operated simultaneously. Sixty (60) days after construction of printing press #67, the Permittee shall permanently remove from service printing press #62.**

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

D.1.67 ~~Catalytic Oxidizers~~Regenerative Thermal Oxidizer

To document compliance with Condition D.1.56, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be complete and sufficient to establish compliance with the Compliance Monitoring requirements established in Condition D.1.56. These records shall contain a minimum of the following:

- (1) Records of the ~~catalytic oxidizer~~ **regenerative thermal oxidizer** operating parameters including the VOC destruction of ~~each control device~~ **regenerative thermal oxidizer** and a description of the data used to establish the capture and destruction efficiencies;
- (2) Records of the ~~catalytic oxidizer~~ **regenerative thermal oxidizer** temperature ~~for both C1 and C2 on~~ **recorded on** a daily basis;
- (3) Records of the differential pressure across the dryer inlets and outlets as specified in Condition D.1.56(b). The records shall be kept using differential pressure gauges with one inlet of each gauge being within the dryer and the other inlet of the gauge being open to the ambient air in the press room; and
- (4) Records of the dryer temperatures. The records shall be kept using an electronic data management system (EDMS) which shall be installed and operated to record the instantaneous temperature on a frequency of not less than every hour. As an alternative to installing an EDMS, manual readings shall be taken every one hour;

All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.78 Volatile Organic Compounds (VOC) Usage

- (a) To document compliance with Conditions **D.1.1 and D.1.2**, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Conditions **D.1.1 and D.1.2**.
- (1) The amount and VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
 - (2) The cleanup solvent usage for each month;
 - (3) The total VOC usage for each month; and
 - (4) The weight of VOCs emitted for each compliance period.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.89 Hazardous Air Pollutants (HAP)

- (a) To document compliance with Condition **D.1.2**, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the HAP usage limits and/or the HAP emission limits established in Condition **D.1.2**.
- (1) The amount and HAP content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
 - (2) The cleanup solvent usage for each month;
 - (3) The total HAP usage for each month;
 - (4) The weight of HAPs emitted for each compliance period; and
 - (5) Identification of the facility or facilities associated with the usage of each HAP.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.910 Quarterly Reporting

A quarterly summary of the information to document compliance with Conditions **D.1.1 and D.1.2** shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

Conclusion

The operation of these facilities shall be subject to the conditions in the attached proposed FESOP Significant Permit Revision, No. 001-14219-00039.

**Indiana Department of Environmental Management
Office of Air Quality**

Addendum to the
Technical Support Document for Significant Permit Revision to a FESOP

**EP Graphics, Inc.
169 South Jefferson Street
Berne, Indiana 46711**

F-001-14219, Plt ID-001-00039

On March 29, 2001, the Office of Air Quality (OAQ) had a notice published in the Decatur Daily Democrat, Decatur, Indiana, stating that EP Graphic, Inc. had applied for a Significant Permit Revision to their FESOP to operate a new lithographic printing press and to replace their existing catalytic oxidizer with a regenerative thermal oxidizer. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On June 8, 2001, EP Graphics, Inc. submitted comments on the proposed Significant Permit Revision. The summary of the comments is as follows:

Comment 1:

Operation Permit Issuance Date: December 11, 1996
Significant Permit Revision: 001-14219-00039

EP Graphics is currently considering installing a different RTO than the one included with the application. The destruction efficiency will still be greater than 90%, but the normal operation temperature will be lower than the 1,500 degrees F listed in the draft permit. It will operate at 1,400 degrees F instead. The natural gas usage at start up [worst case] will be 1,365,000 Btu/hr compared to the original one that was listed at 1,200,000 Btu/yr. Emissions from the natural gas combustion would still be insignificant.

Response to Comment 1:

Since the temperature requested will still result in a destruction efficiency greater than 90%, IDEM, OAQ has determined that the proposed regenerative thermal oxidizer operated at 1400EF still represents BACT for these facilities. IDEM, OAQ has corrected Conditions D1.2 and D.1.6 as follows:

D.1.2 Volatile Organic Compounds [326 IAC 8-1-6]

The Permittee shall apply the following Best Available Control Technology (BACT) to printing press #67:

- (a) Negative air flow pressure to the dryer as indicated by differential pressure gauges across the dryer inlets;
- (b) One hundred percent (100%) capture of the VOCs emitted by the heatset inks not retained by the substrate;
- (c) Seventy percent (70%) capture of the VOCs emitted from alcohol substitution in the fountain solutions; and
- (d) Ninety percent (90%) destruction of the VOCs captured using a regenerative thermal oxidizer operating at a minimum temperature of ~~1,500~~ 1,400 degrees F.

D.1.6 Regenerative Thermal Oxidizer

- (a) The regenerative thermal oxidizer shall operate at all times that presses #62, #66, and #67 are in operation. When operating, the thermal incinerator shall maintain a minimum operating temperature of ~~1500~~**1400**EF during operation until a temperature and fan amperage has been determined from the most recent compliant stack test, as approved by IDEM. The temperature correlates to an overall VOC control efficiency of 90% based on the manufacturer design specifications.
- (b) The permittee shall maintain a negative air flow pressure for the press dryers relative to the surrounding room as indicated by differential pressure gauges across the dryer inlets and outlets. To demonstrate that a negative air flow pressure is achieved on a continuous basis, the Permittee shall install differential pressure gauges at each of the dryer inlets and outlets, and measure and record the differential pressure across the inlets and outlets of the #62, #66, and #67 press dryers at least once per shift.

Maintaining a negative pressure across the dryer inlets and outlets shall yield the following capture efficiencies for presses #62, #66, and #67:

- (1) One hundred percent (100%) capture of the VOCs emitted by the heatset inks not retained by the substrate; and

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Two Natural Gas-Fired Dryers

Company Name: EP Graphics, Inc.

Address City IN Zip: Berne, Indiana 46711

CP: 001-14219-00039

Pit ID: 00039

Reviewer: ERG/AB

Date: 04/05/01

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

8.0

70.1

Note : Two dryers each with a maximum heat input capacity of 4.0 MMBtu/hour

Pollutant

Emission Factor in lb/MMCF	PM*	PM10*	SO2	NOx	VOC	CO
				100.0		
				**see below		
Potential Emission in tons/yr	0.27	0.27	0.02	3.50	0.19	2.94

*PM and PM-10 emission factor is filterable and condensable PM combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only**

Page 2 of 5 TSD App A

MM BTU/HR <100

Two Natural Gas-Fired Dryers

HAPs Emissions

Company Name: EP Graphics, Inc.

Address City IN Zip: Berne, Indiana 46711

CP: 001-14219-00039

Pit ID: 00039

Reviewer: ERG/AB

Date: 04/05/01

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	7.358E-05	4.205E-05	2.628E-03	6.307E-02	1.191E-04

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.752E-05	3.854E-05	4.906E-05	1.332E-05	7.358E-05

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

gasc99.wk4 9/95
updated 4/99

Appendix A: Emissions Calculations
VOC From Printing Press Operations Before Controls

Page 3 of 5 TSD App A

Company Name: EP Graphics, Inc.
Address City IN Zip: Berne, Indiana 46711
CP: 001-14219-00039
Plt ID: 00039
Reviewer: ERG/AB
Date: 04/05/01

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/YEAR
King Process Color Press	1263.89	36	286978

INK VOCS					
Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Volatiles*	Flash Off %	Throughput (MMin^2/Year)	Emissions (TONS/YEAR)
H/S All Purpose Black (C-71470)	0.4775	31.50%	80.00%	286978	17.27
H/S All Purpose Blue (C-71471)	0.3492	36.20%	80.00%	286978	14.51
H/S All Purpose Yellow (C-71473)	0.3706	30.30%	80.00%	286978	12.89
Fountain Solution Unigraphic 6M	0.3154	10.89%	100.00%	286978	4.93
loss Aqueous Acrylic Emulsion (CK-105)	0.3400	4.00%	80.00%	286978	1.56
H/S All Purpose Red (C-71472)	0.3350	32.40%	80.00%	286978	12.46

Total VOC Emissions =	63.62 Ton/yr
------------------------------	---------------------

*VOC (Tons/Year) = Maximum Coverage pounds per MMin^2 * Weight % volatiles (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin^2 per Year

VOC = Maximum Coverage pounds per MMin^2 * Weight percentage volatiles (water minus organics) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

NOTE: HEAT SET OFFSET PRINTING HAS AN ASSUMED FLASH OFF OF 80%. OTHER TYPES OF PRINTERS HAVE A FLASH OFF OF 100%.

(Source -OAQPS Draft Guidance, "Control of Volatile Organic Compound Emissions from Offset Lithographic Printing (9/93))

printing.wk4 9/95

updated 11/98

Appendix A: Emissions Calculations
HAP Emissions From Printing Press Operations Before Controls

Page 4 of 5 TSD App A

Company Name: EP Graphics, Inc.
Address City IN Zip: Berne, Indiana 46711
CP: 001-14219-00039
Plt ID: 00039
Reviewer: ERG/AB
Date: 04/05/01

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/YEAR
King Process Color Press	1263.89	36	286978

INK VOCS					
Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Glycol Ether	Flash Off % (a)	Throughput (MMin^2/Year)	Emissions (TONS/YEAR)
H/S All Purpose Black (C-71470)	0.4775	0.00%	80.00%	286978	0.00
H/S All Purpose Blue (C-71471)	0.3492	0.00%	80.00%	286978	0.00
H/S All Purpose Yellow (C-71473)	0.3706	0.00%	80.00%	286978	0.00
Fountain Solution Unigraphic 6M	0.3154	14.00%	100.00%	286978	6.34
loss Aqueous Acrylic Emulsion (CK-105)	0.3400	0.00%	80.00%	286978	0.00
H/S All Purpose Red (C-71472)	0.3350	0.00%	80.00%	286978	0.00

Total HAP Emissions =	6.34 Ton/yr
------------------------------	--------------------

*HAP (Tons/Year) = Maximum Coverage pounds per MMin^2 * Weight % HAP (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

(a) - 20% of ink solvent is retained on the paper substrate.

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin^2 per Year

HAP = Maximum Coverage pounds per MMin^2 * Weight percentage volatiles (water minus organics) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

NOTE: HEAT SET OFFSET PRINTING HAS AN ASSUMED FLASH OFF OF 80%. OTHER TYPES OF PRINTERS HAVE A FLASH OFF OF 100%.

(Source -OAQPS Draft Guidance, "Control of Volatile Organic Compound Emissions from Offset Lithographic Printing (9/93))

printing.wk4 9/95

updated 11/98

Appendix A: Emissions Calculations
VOC and HAP Emissions From Printing Press Operations After Controls

Page 5 of 5 TSD App A

Company Name: EP Graphics, Inc.
Address City IN Zip: Berne, Indiana 46711
CP: 001-14219-00039
Plt ID: 00039
Reviewer: ERG/AB
Date: 04/05/01

Press I.D.	TYPE OF CONTROL
King Process Color Press	Regenerative Oxidizer

INK VOCs						
Ink Name	Maxium PTE for VOCs (tons/year)	% Capture Efficiency	Minimum Destruction Efficiency (%)	Maximum PTE for HAPs (tons/year)	VOC Emissions (TONS/YEAR)	HAP Emissions (TONS/YEAR)
H/S All Purpose Black (C-71470)	17.27	100.00%	90.00%	0.00	1.73	0.00
H/S All Purpose Blue (C-71471)	14.51	100.00%	90.00%	0.00	1.45	0.00
H/S All Purpose Yellow (C-71473)	12.89	100.00%	90.00%	0.00	1.29	0.00
Fountain Solution Unigraphic 6M	4.93	70.00%	90.00%	6.34	1.82	2.35
loss Aqueous Acrylic Emulsion (CK-105)	1.56	0.00%	0.00%	0.00	1.56	0.00
H/S All Purpose Red (C-71472)	12.46	100.00%	90.00%	0.00	1.25	0.00

Total Emissions After Controls (tons/yr) = **9.10** **2.35**

METHODOLOGY

HAP Emissions after controls (tons/yr) = (Maximum PTE (ton/yr) * (1-Capture Efficiency (%))) + ((Max. PTE (tons/yr) * Capture Efficiency (%)) * (1-Control Efficiency (%)))

VOC Emissions after controls (tons/yr) = (Maximum PTE (ton/yr) * (1-Capture Efficiency (%))) + ((Max. PTE (tons/yr) * Capture Efficiency (%)) * (1-Control Efficiency (%)))

printing.wk4 9/95
updated 11/98